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UNITED STATES NAVAL OBSERVATORY

CIRCULAR NO. 119

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PHASES OF THE MOON 1960 – 2003

by

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This *Circular* contains the phases of the moon, expressed in Ephemeris Time, for the years 1960 – 2003. These phases of the moon have been computed using an abridged form of E. W. Brown's Lunar Theory (*Astronomical Papers,* Vol. XV, Pt. 1, 1953) and Newcomb's Theory of the Sun (*Astronomical Papers,* Vol. VI, Pt. 1, 1895). Therefore, the times of the phases so computed may occasionally differ by a minute from the times printed annually in the *American Ephemeris and Nautical Almanac.*

	NEW MOON			FIRST QUARTER				FULL MOON				LAST QUARTER			
	D	H	M		D	H	M		D	H	M		D	H	M
1960															
				JAN.	5	18	53	JAN.	13	23	51	JAN.	21	15	01
JAN.	28	06	15	FEB.	4	14	26	FEB.	12	17	25	FEB.	19	23	48
FEB.	26	18	25	MAR.	5	11	05	MAR.	13	08	26	MAR.	20	06	41
MAR.	27	07	38	APR.	4	07	05	APR.	11	20	28	APR.	18	12	57
APR.	25	21	45	MAY	4	01	01	MAY	11	05	42	MAY	17	19	54
MAY	25	12	26	JUNE	2	16	01	JUNE	9	13	02	JUNE	16	04	36
JUNE	24	03	27	JULY	2	03	49	JULY	8	19	38	JULY	15	15	43
JULY	23	18	31	JULY	31	12	39	AUG.	7	02	42	AUG.	14	05	37
AUG.	22	09	16	AUG.	29	19	23	SEPT.	5	11	19	SEPT.	12	22	20
SEPT.	20	23	13	SEPT.	28	01	13	OCT.	4	22	17	OCT.	12	17	26
OCT.	20	12	02	OCT.	27	07	34	NOV.	3	11	58	NOV.	11	13	48
NOV.	18	23	46	NOV.	25	15	42	DEC.	3	04	25	DEC.	11	09	39
DEC.	18	10	47	DEC.	25	02	30								
1961															
								JAN.	1	23	06	JAN.	10	03	02
JAN.	16	21	31	JAN.	23	16	14	JAN.	31	18	47	FEB.	8	16	50
FEB.	15	08	11	FEB.	22	08	34	MAR.	2	13	35	MAR.	10	02	57
MAR.	16	18	51	MAR.	24	02	48	APR.	1	05	48	APR.	8	10	16
APR.	15	05	39	APR.	22	21	49	APR.	30	18	41	MAY	7	15	58
MAY	14	16	55	MAY	22	16	19	MAY	30	04	38	JUNE	5	21	19
JUNE	13	05	17	JUNE	21	09	02	JUNE	28	12	38	JULY	5	03	32
JULY	12	19	11	JULY	20	23	14	JULY	27	19	51	AUG.	3	11	48
AUG.	11	10	37	AUG.	19	10	51	AUG.	26	03	14	SEPT.	1	23	07
SEPT.	10	02	50	SEPT.	17	20	24	SEPT.	24	11	34	OCT.	1	14	10
OCT.	9	18	53	OCT.	17	04	34	OCT.	23	21	31	OCT.	31	08	59
NOV.	8	09	59	NOV.	15	12	13	NOV.	22	09	45	NOV.	30	06	20
DEC.	7	23	52	DEC.	14	20	07	DEC.	22	00	43	DEC.	30	03	58
1962															
JAN.	6	12	36	JAN.	13	05	02	JAN.	20	18	16	JAN.	28	23	37
FEB.	5	00	11	FEB.	11	15	43	FEB.	19	13	19	FEB.	27	15	50
MAR.	6	10	32	MAR.	13	04	39	MAR.	21	07	56	MAR.	29	04	11
APR.	4	19	45	APR.	11	19	51	APR.	20	00	34	APR.	27	13	00
MAY	4	04	25	MAY	11	12	45	MAY	19	14	32	MAY	26	19	06
JUNE	2	13	27	JUNE	10	06	22	JUNE	18	02	03	JUNE	24	23	43
JULY	1	23	53	JULY	9	23	40	JULY	17	11	42	JULY	24	04	19
JULY	31	12	25	AUG.	8	15	55	AUG.	15	20	10	AUG.	22	10	27
AUG.	30	03	09	SEPT.	7	06	45	SEPT.	14	04	12	SEPT.	20	19	36
SEPT.	28	19	40	OCT.	6	19	55	OCT.	13	12	34	OCT.	20	08	48
OCT.	28	13	05	NOV.	5	07	16	NOV.	11	22	05	NOV.	19	02	10
NOV.	27	06	30	DEC.	4	16	48	DEC.	11	09	28	DEC.	18	22	42
DEC.	26	23	00												
1963															
				JAN.	3	01	02	JAN.	9	23	08	JAN.	17	20	35
JAN.	25	13	42	FEB.	1	08	51	FEB.	8	14	52	FEB.	16	17	40
FEB.	24	02	06	MAR.	2	17	18	MAR.	10	07	50	MAR.	18	12	08
MAR.	25	12	10	APR.	1	03	15	APR.	9	00	58	APR.	17	02	53
APR.	23	20	29	APR.	30	15	09	MAY	8	17	23	MAY	16	13	36
MAY	23	04	01	MAY	30	04	55	JUNE	7	08	31	JUNE	14	20	54
JUNE	21	11	46	JUNE	28	20	24	JULY	6	21	57	JULY	14	01	58
JULY	20	20	43	JULY	28	13	13	AUG.	5	09	31	AUG.	12	06	22
AUG.	19	07	35	AUG.	27	06	55	SEPT.	3	19	34	SEPT.	10	11	43
SEPT.	17	20	52	SEPT.	26	00	38	OCT.	3	04	45	OCT.	9	19	28
OCT.	17	12	43	OCT.	25	17	20	NOV.	1	13	57	NOV.	8	06	37
NOV.	16	06	51	NOV.	24	07	56	NOV.	30	23	55	DEC.	7	21	35
DEC.	16	02	07	DEC.	23	19	55	DEC.	30	11	04				

PHASES OF THE MOON

NEW MOON				FIRST QUARTER				FULL MOON				LAST QUARTER			
	D	H	M		D	H	M		D	H	M		D	H	M
1964															
												JAN.	6	15	58
JAN.	14	20	45	JAN.	22	05	29	JAN.	28	23	23	FEB.	5	12	42
FEB.	13	13	02	FEB.	20	13	25	FEB.	27	12	40	MAR.	6	10	01
MAR.	14	02	14	MAR.	20	20	39	MAR.	28	02	49	APR.	5	05	45
APR.	12	12	38	APR.	19	04	09	APR.	26	17	50	MAY	4	22	20
MAY	11	21	02	MAY	18	12	42	MAY	26	09	29	JUNE	3	11	08
JUNE	10	04	23	JUNE	16	23	02	JUNE	25	01	09	JULY	2	20	31
JULY	9	11	31	JULY	16	11	48	JULY	24	15	58	AUG.	1	03	30
AUG.	7	19	17	AUG.	15	03	20	AUG.	23	05	26	AUG.	30	09	16
SEPT.	6	04	34	SEPT.	13	21	25	SEPT.	21	17	31	SEPT.	28	15	02
OCT.	5	16	20	OCT.	13	16	57	OCT.	21	04	45	OCT.	27	22	00
NOV.	4	07	16	NOV.	12	12	21	NOV.	19	15	44	NOV.	26	07	11
DEC.	4	01	18	DEC.	12	06	02	DEC.	19	02	42	DEC.	25	19	27
1965															
JAN.	2	21	07	JAN.	10	21	00	JAN.	17	13	38	JAN.	24	11	07
FEB.	1	16	37	FEB.	9	08	53	FEB.	16	00	27	FEB.	23	05	40
MAR.	3	09	56	MAR.	10	17	53	MAR.	17	11	24	MAR.	25	01	37
APR.	2	00	21	APR.	9	00	40	APR.	15	23	03	APR.	23	21	08
MAY	1	11	56	MAY	8	06	20	MAY	15	11	53	MAY	23	14	41
MAY	30	21	13	JUNE	6	12	11	JUNE	14	02	00	JUNE	22	05	36
JUNE	29	04	53	JULY	5	19	37	JULY	13	17	02	JULY	21	17	54
JULY	28	11	45	AUG.	4	05	48	AUG.	12	08	22	AUG.	20	03	51
AUG.	26	18	51	SEPT.	2	19	28	SEPT.	10	23	32	SEPT.	18	11	59
SEPT.	25	03	18	OCT.	2	12	38	OCT.	10	14	14	OCT.	17	19	00
OCT.	24	14	11	NOV.	1	08	26	NOV.	9	04	15	NOV.	16	01	55
NOV.	23	04	11	DEC.	1	05	25	DEC.	8	17	22	DEC.	15	09	53
DEC.	22	21	04	DEC.	31	01	47								
1966															
								JAN.	7	05	17	JAN.	13	20	00
JAN.	21	15	47	JAN.	29	19	48	FEB.	5	15	59	FEB.	12	08	54
FEB.	20	10	50	FEB.	28	10	16	MAR.	7	01	45	MAR.	14	00	19
MAR.	22	04	47	MAR.	29	20	44	APR.	5	11	14	APR.	12	17	29
APR.	20	20	36	APR.	28	03	49	MAY	4	21	01	MAY	12	11	20
MAY	20	09	43	MAY	27	08	51	JUNE	3	07	41	JUNE	11	04	59
JUNE	18	20	10	JUNE	25	13	23	JULY	2	19	37	JULY	10	21	43
JULY	18	04	31	JULY	24	19	01	AUG.	1	09	06	AUG.	9	12	56
AUG.	16	11	48	AUG.	23	03	02	AUG.	31	00	14	SEPT.	8	02	07
SEPT.	14	19	14	SEPT.	21	14	26	SEPT.	29	16	48	OCT.	7	13	09
OCT.	14	03	52	OCT.	21	05	35	OCT.	29	10	00	NOV.	5	22	19
NOV.	12	14	27	NOV.	20	00	20	NOV.	28	02	41	DEC.	5	06	23
DEC.	12	03	14	DEC.	19	21	41	DEC.	27	17	44				
1967															
												JAN.	3	14	20
JAN.	10	18	07	JAN.	18	19	41	JAN.	26	06	41	FEB.	1	23	03
FEB.	9	10	45	FEB.	17	15	56	FEB.	24	17	44	MAR.	3	09	11
MAR.	11	04	31	MAR.	19	08	31	MAR.	26	03	21	APR.	1	20	59
APR.	9	22	21	APR.	17	20	48	APR.	24	12	04	MAY	1	10	33
MAY	9	14	56	MAY	17	05	18	MAY	23	20	23	MAY	31	01	52
JUNE	8	05	14	JUNE	15	11	12	JUNE	22	04	57	JUNE	29	18	39
JULY	7	17	01	JULY	14	15	54	JULY	21	14	40	JULY	29	12	15
AUG.	6	02	49	AUG.	12	20	45	AUG.	20	02	28	AUG.	28	05	35
SEPT.	4	11	38	SEPT.	11	03	06	SEPT.	18	17	00	SEPT.	26	21	44
OCT.	3	20	24	OCT.	10	12	12	OCT.	18	10	11	OCT.	26	12	04
NOV.	2	05	49	NOV.	9	01	00	NOV.	17	04	53	NOV.	25	00	24
DEC.	1	16	10	DEC.	8	17	58	DEC.	16	23	21	DEC.	24	10	49
DEC.	31	03	39												

NEW MOON	D	H	M	FIRST QUARTER	D	H	M	FULL MOON	D	H	M	LAST QUARTER	D	H	M
1968															
				JAN.	7	14	23	JAN.	15	16	12	JAN.	22	19	38
JAN.	29	16	30	FEB.	6	12	21	FEB.	14	06	44	FEB.	21	03	28
FEB.	28	06	56	MAR.	7	09	21	MAR.	14	18	53	MAR.	21	11	08
MAR.	28	22	49	APR.	6	03	29	APR.	13	04	52	APR.	19	19	35
APR.	27	15	22	MAY	5	17	55	MAY	12	13	06	MAY	19	05	45
MAY	27	07	30	JUNE	4	04	47	JUNE	10	20	14	JUNE	17	18	14
JUNE	25	22	25	JULY	3	12	42	JULY	10	03	19	JULY	17	09	12
JULY	25	11	50	AUG.	1	18	34	AUG.	8	11	33	AUG.	16	02	14
AUG.	23	23	58	AUG.	30	23	35	SEPT.	6	22	08	SEPT.	14	20	31
SEPT.	22	11	09	SEPT.	29	05	07	OCT.	6	11	47	OCT.	14	15	06
OCT.	21	21	45	OCT.	28	12	40	NOV.	5	04	25	NOV.	13	08	54
NOV.	20	08	02	NOV.	26	23	31	DEC.	4	23	08	DEC.	13	00	50
DEC.	19	18	19	DEC.	26	14	15								
1969															
								JAN.	3	18	28	JAN.	11	14	02
JAN.	18	04	59	JAN.	25	08	24	FEB.	2	12	56	FEB.	10	00	09
FEB.	16	16	26	FEB.	24	04	31	MAR.	4	05	18	MAR.	11	07	45
MAR.	18	04	52	MAR.	26	00	49	APR.	2	18	46	APR.	9	13	59
APR.	16	18	16	APR.	24	19	45	MAY	2	05	14	MAY	8	20	12
MAY	16	08	26	MAY	24	12	16	MAY	31	13	19	JUNE	7	03	39
JUNE	14	23	10	JUNE	23	01	44	JUNE	29	20	05	JULY	6	13	18
JULY	14	14	11	JULY	22	12	10	JULY	29	02	46	AUG.	5	01	39
AUG.	13	05	17	AUG.	20	20	03	AUG.	27	10	33	SEPT.	3	16	59
SEPT.	11	19	57	SEPT.	19	02	25	SEPT.	25	20	21	OCT.	3	11	06
OCT.	11	09	39	OCT.	18	08	32	OCT.	25	08	45	NOV.	2	07	14
NOV.	9	22	12	NOV.	16	15	46	NOV.	23	23	54	DEC.	2	03	51
DEC.	9	09	42	DEC.	16	01	10	DEC.	23	17	35	DEC.	31	22	53
1970															
JAN.	7	20	36	JAN.	14	13	19	JAN.	22	12	56	JAN.	30	14	39
FEB.	6	07	13	FEB.	13	04	11	FEB.	21	08	20	MAR.	1	02	34
MAR.	7	17	44	MAR.	14	21	16	MAR.	23	01	53	MAR.	30	11	04
APR.	6	04	10	APR.	13	15	43	APR.	21	16	22	APR.	28	17	19
MAY	5	14	52	MAY	13	10	27	MAY	21	03	39	MAY	27	22	33
JUNE	4	02	22	JUNE	12	04	07	JUNE	19	12	28	JUNE	26	04	02
JULY	3	15	18	JULY	11	19	44	JULY	18	20	00	JULY	25	11	00
AUG.	2	05	58	AUG.	10	08	51	AUG.	17	03	16	AUG.	23	20	35
AUG.	31	22	03	SEPT.	8	19	39	SEPT.	15	11	11	SEPT.	22	09	43
SEPT.	30	14	32	OCT.	8	04	43	OCT.	14	20	22	OCT.	22	02	48
OCT.	30	06	28	NOV.	6	12	48	NOV.	13	07	28	NOV.	20	23	14
NOV.	28	21	14	DEC.	5	20	36	DEC.	12	21	04	DEC.	20	21	10
DEC.	28	10	43												
1971															
				JAN.	4	04	56	JAN.	11	13	21	JAN.	19	18	09
JAN.	26	22	55	FEB.	2	14	32	FEB.	10	07	42	FEB.	18	12	14
FEB.	25	09	49	MAR.	4	02	02	MAR.	12	02	34	MAR.	20	02	31
MAR.	26	19	24	APR.	2	15	46	APR.	10	20	11	APR.	18	12	58
APR.	25	04	02	MAY	2	07	35	MAY	10	11	24	MAY	17	20	15
MAY	24	12	33	JUNE	1	00	43	JUNE	9	00	04	JUNE	16	01	25
JUNE	22	21	59	JUNE	30	18	12	JULY	8	10	37	JULY	15	05	48
JULY	22	09	15	JULY	30	11	08	AUG.	6	19	43	AUG.	13	10	56
AUG.	20	22	54	AUG.	29	02	57	SEPT.	5	04	04	SEPT.	11	18	24
SEPT.	19	14	43	SEPT.	27	17	17	OCT.	4	12	21	OCT.	11	05	30
OCT.	19	08	00	OCT.	27	05	55	NOV.	2	21	21	NOV.	9	20	52
NOV.	18	01	46	NOV.	25	16	37	DEC.	2	07	49	DEC.	9	16	03
DEC.	17	19	03	DEC.	25	01	36	DEC.	31	20	21				

PHASES OF THE MOON

NEW MOON	D	H	M	FIRST QUARTER	D	H	M	FULL MOON	D	H	M	LAST QUARTER	D	H	M
1972															
												JAN.	8	13	32
JAN.	16	10	54	JAN.	23	09	29	JAN.	30	10	59	FEB.	7	11	12
FEB.	15	00	29	FEB.	21	17	21	FEB.	29	03	13	MAR.	8	07	06
MAR.	15	11	35	MAR.	22	02	13	MAR.	29	20	06	APR.	6	23	45
APR.	13	20	32	APR.	20	12	46	APR.	28	12	45	MAY	6	12	27
MAY	13	04	08	MAY	20	01	18	MAY	28	04	28	JUNE	4	21	22
JUNE	11	11	31	JUNE	18	15	41	JUNE	26	18	47	JULY	4	03	26
JULY	10	19	40	JULY	18	07	47	JULY	26	07	24	AUG.	2	08	03
AUG.	9	05	27	AUG.	17	01	10	AUG.	24	18	22	AUG.	31	12	49
SEPT.	7	17	29	SEPT.	15	19	14	SEPT.	23	04	07	SEPT.	29	19	17
OCT.	7	08	09	OCT.	15	12	55	OCT.	22	13	26	OCT.	29	04	41
NOV.	6	01	21	NOV.	14	05	01	NOV.	20	23	08	NOV.	27	17	45
DEC.	5	20	25	DEC.	13	18	36	DEC.	20	09	46	DEC.	27	10	28
1973															
JAN.	4	15	43	JAN.	12	05	28	JAN.	18	21	30	JAN.	26	06	06
FEB.	3	09	23	FEB.	10	14	06	FEB.	17	10	07	FEB.	25	03	12
MAR.	5	00	08	MAR.	11	21	26	MAR.	18	23	34	MAR.	26	23	48
APR.	3	11	46	APR.	10	04	29	APR.	17	13	51	APR.	25	17	59
MAY	2	20	56	MAY	9	12	08	MAY	17	04	58	MAY	25	08	40
JUNE	1	04	35	JUNE	7	21	11	JUNE	15	20	36	JUNE	23	19	46
JUNE	30	11	40	JULY	7	08	27	JULY	15	11	56	JULY	23	03	58
JULY	29	19	00	AUG.	5	22	27	AUG.	14	02	18	AUG.	21	10	23
AUG.	28	03	26	SEPT.	4	15	22	SEPT.	12	15	17	SEPT.	19	16	11
SEPT.	26	13	55	OCT.	4	10	32	OCT.	12	03	10	OCT.	18	22	34
OCT.	26	03	17	NOV.	3	06	30	NOV.	10	14	28	NOV.	17	06	35
NOV.	24	19	56	DEC.	3	01	30	DEC.	10	01	36	DEC.	16	17	14
DEC.	24	15	07												
1974															
				JAN.	1	18	07	JAN.	8	12	37	JAN.	15	07	04
JAN.	23	11	03	JAN.	31	07	40	FEB.	6	23	25	FEB.	14	00	05
FEB.	22	05	35	MAR.	1	18	03	MAR.	8	10	04	MAR.	15	19	15
MAR.	23	21	25	MAR.	31	01	45	APR.	6	21	01	APR.	14	14	58
APR.	22	10	17	APR.	29	07	40	MAY	6	08	55	MAY	14	09	30
MAY	21	20	35	MAY	28	13	04	JUNE	4	22	11	JUNE	13	01	47
JUNE	20	04	56	JUNE	26	19	21	JULY	4	12	41	JULY	12	15	29
JULY	19	12	07	JULY	26	03	52	AUG.	3	03	57	AUG.	11	02	47
AUG.	17	19	02	AUG.	24	15	39	SEPT.	1	19	25	SEPT.	9	12	01
SEPT.	16	02	45	SEPT.	23	07	09	OCT.	1	10	38	OCT.	8	19	46
OCT.	15	12	25	OCT.	23	01	54	OCT.	31	01	20	NOV.	7	02	48
NOV.	14	00	53	NOV.	21	22	40	NOV.	29	15	11	DEC.	6	10	11
DEC.	13	16	26	DEC.	21	19	44	DEC.	29	03	51				
1975															
												JAN.	4	19	05
JAN.	12	10	21	JAN.	20	15	15	JAN.	27	15	11	FEB.	3	06	23
FEB.	11	05	18	FEB.	19	07	40	FEB.	26	01	15	MAR.	4	20	21
MAR.	12	23	48	MAR.	20	20	05	MAR.	27	10	37	APR.	3	12	26
APR.	11	16	40	APR.	19	04	41	APR.	25	19	56	MAY	3	05	44
MAY	11	07	06	MAY	18	10	29	MAY	25	05	51	JUNE	1	23	23
JUNE	9	18	50	JUNE	16	14	59	JUNE	23	16	55	JULY	1	16	37
JULY	9	04	10	JULY	15	19	47	JULY	23	05	29	JULY	31	08	50
AUG.	7	11	58	AUG.	14	02	25	AUG.	21	19	48	AUG.	29	23	20
SEPT.	5	19	19	SEPT.	12	12	00	SEPT.	20	11	51	SEPT.	28	11	47
OCT.	5	03	23	OCT.	12	01	16	OCT.	20	05	06	OCT.	27	22	08
NOV.	3	13	05	NOV.	10	18	21	NOV.	18	22	29	NOV.	26	06	52
DEC.	3	00	50	DEC.	10	14	40	DEC.	18	14	40	DEC.	25	14	53

NEW MOON	D	H	M	FIRST QUARTER	D	H	M	FULL MOON	D	H	M	LAST QUARTER	D	H	M
1976															
JAN.	1	14	41	JAN.	9	12	40	JAN.	17	04	47	JAN.	23	23	05
JAN.	31	06	21	FEB.	8	10	06	FEB.	15	16	44	FEB.	22	08	16
FEB.	29	23	26	MAR.	9	04	39	MAR.	16	02	53	MAR.	22	18	56
MAR.	30	17	08	APR.	7	19	03	APR.	14	11	49	APR.	21	07	15
APR.	29	10	20	MAY	7	05	18	MAY	13	20	05	MAY	20	21	22
MAY	29	01	48	JUNE	5	12	21	JUNE	12	04	15	JUNE	19	13	16
JUNE	27	14	50	JULY	4	17	30	JULY	11	13	09	JULY	19	06	30
JULY	27	01	40	AUG.	2	22	08	AUG.	9	23	44	AUG.	18	00	13
AUG.	25	11	01	SEPT.	1	03	36	SEPT.	8	12	53	SEPT.	16	17	21
SEPT.	23	19	55	SEPT.	30	11	13	OCT.	8	04	56	OCT.	16	09	00
OCT.	23	05	10	OCT.	29	22	06	NOV.	6	23	16	NOV.	14	22	40
NOV.	21	15	12	NOV.	28	13	00	DEC.	6	18	15	DEC.	14	10	15
DEC.	21	02	09	DEC.	28	07	49								
1977															
								JAN.	5	12	11	JAN.	12	19	55
JAN.	19	14	12	JAN.	27	05	12	FEB.	4	03	57	FEB.	11	04	08
FEB.	18	03	38	FEB.	26	02	51	MAR.	5	17	14	MAR.	12	11	35
MAR.	19	18	33	MAR.	27	22	27	APR.	4	04	10	APR.	10	19	16
APR.	18	10	36	APR.	26	14	42	MAY	3	13	04	MAY	10	04	09
MAY	18	02	53	MAY	26	03	21	JUNE	1	20	32	JUNE	8	15	08
JUNE	16	18	24	JUNE	24	12	44	JULY	1	03	25	JULY	8	04	40
JULY	16	08	38	JULY	23	19	39	JULY	30	10	53	AUG.	6	20	41
AUG.	14	21	32	AUG.	22	01	05	AUG.	28	20	11	SEPT.	5	14	34
SEPT.	13	09	23	SEPT.	20	06	19	SEPT.	27	08	18	OCT.	5	09	22
OCT.	12	20	31	OCT.	19	12	47	OCT.	26	23	36	NOV.	4	03	59
NOV.	11	07	10	NOV.	17	21	53	NOV.	25	17	32	DEC.	3	21	16
DEC.	10	17	34	DEC.	17	10	38	DEC.	25	12	50				
1978															
												JAN.	2	12	08
JAN.	9	04	01	JAN.	16	03	04	JAN.	24	07	56	JAN.	31	23	52
FEB.	7	14	56	FEB.	14	22	12	FEB.	23	01	27	MAR.	2	08	35
MAR.	9	02	37	MAR.	16	18	21	MAR.	24	16	21	MAR.	31	15	11
APR.	7	15	16	APR.	15	13	56	APR.	23	04	11	APR.	29	21	03
MAY	7	04	47	MAY	15	07	40	MAY	22	13	17	MAY	29	03	32
JUNE	5	19	02	JUNE	13	22	45	JUNE	20	20	32	JUNE	27	11	45
JULY	5	09	51	JULY	13	10	50	JULY	20	03	06	JULY	26	22	32
AUG.	4	01	01	AUG.	11	20	07	AUG.	18	10	15	AUG.	25	12	19
SEPT.	2	16	10	SEPT.	10	03	21	SEPT.	16	19	02	SEPT.	24	05	08
OCT.	2	06	42	OCT.	9	09	38	OCT.	16	06	10	OCT.	24	00	35
OCT.	31	20	07	NOV.	7	16	19	NOV.	14	20	01	NOV.	22	21	25
NOV.	30	08	20	DEC.	7	00	35	DEC.	14	12	32	DEC.	22	17	42
DEC.	29	19	37												
1979															
				JAN.	5	11	15	JAN.	13	07	09	JAN.	21	11	24
JAN.	28	06	20	FEB.	4	00	37	FEB.	12	02	40	FEB.	20	01	18
FEB.	26	16	46	MAR.	5	16	23	MAR.	13	21	15	MAR.	21	11	23
MAR.	28	03	00	APR.	4	09	58	APR.	12	13	16	APR.	19	18	31
APR.	26	13	16	MAY	4	04	26	MAY	12	02	01	MAY	18	23	57
MAY	26	00	01	JUNE	2	22	39	JUNE	10	11	56	JUNE	17	05	02
JUNE	24	11	59	JULY	2	15	24	JULY	9	20	01	JULY	16	11	00
JULY	24	01	42	AUG.	1	05	58	AUG.	8	03	22	AUG.	14	19	03
AUG.	22	17	11	AUG.	30	18	10	SEPT.	6	11	00	SEPT.	13	06	16
SEPT.	21	09	48	SEPT.	29	04	20	OCT.	5	19	37	OCT.	12	21	25
OCT.	21	02	24	OCT.	28	13	07	NOV.	4	05	48	NOV.	11	16	24
NOV.	19	18	04	NOV.	26	21	09	DEC.	3	18	09	DEC.	11	14	00
DEC.	19	08	24	DEC.	26	05	12								

NEW MOON	D	H	M	FIRST QUARTER	D	H	M	FULL MOON	D	H	M	LAST QUARTER	D	H	M
1980															
								JAN.	2	09	04	JAN.	10	11	51
JAN.	17	21	21	JAN.	24	13	59	FEB.	1	02	22	FEB.	9	07	37
FEB.	16	08	51	FEB.	23	00	15	MAR.	1	21	00	MAR.	9	23	49
MAR.	16	18	57	MAR.	23	12	32	MAR.	31	15	15	APR.	8	12	07
APR.	15	03	47	APR.	22	03	01	APR.	30	07	35	MAY	7	20	51
MAY	14	12	01	MAY	21	19	17	MAY	29	21	29	JUNE	6	02	54
JUNE	12	20	39	JUNE	20	12	32	JUNE	28	09	03	JULY	5	07	29
JULY	12	06	46	JULY	20	05	52	JULY	27	18	55	AUG.	3	12	01
AUG.	10	19	10	AUG.	18	22	29	AUG.	26	03	43	SEPT.	1	18	08
SEPT.	9	10	01	SEPT.	17	13	55	SEPT.	24	12	09	OCT.	1	03	18
OCT.	9	02	51	OCT.	17	03	49	OCT.	23	20	53	OCT.	30	16	34
NOV.	7	20	43	NOV.	15	15	47	NOV.	22	06	40	NOV.	29	10	00
DEC.	7	14	36	DEC.	15	01	48	DEC.	21	18	09	DEC.	29	06	33
1981															
JAN.	6	07	25	JAN.	13	10	10	JAN.	20	07	40	JAN.	28	04	20
FEB.	4	22	15	FEB.	11	17	50	FEB.	18	22	59	FEB.	27	01	16
MAR.	6	10	32	MAR.	13	01	52	MAR.	20	15	23	MAR.	28	19	35
APR.	4	20	20	APR.	11	11	12	APR.	19	08	00	APR.	27	10	15
MAY	4	04	20	MAY	10	22	23	MAY	19	00	04	MAY	26	21	01
JUNE	2	11	33	JUNE	9	11	34	JUNE	17	15	05	JUNE	25	04	26
JULY	1	19	04	JULY	9	02	40	JULY	17	04	40	JULY	24	09	41
JULY	31	03	53	AUG.	7	19	27	AUG.	15	16	38	AUG.	22	14	17
AUG.	29	14	45	SEPT.	6	13	27	SEPT.	14	03	10	SEPT.	20	19	48
SEPT.	28	04	08	OCT.	6	07	46	OCT.	13	12	51	OCT.	20	03	41
OCT.	27	20	14	NOV.	5	01	09	NOV.	11	22	28	NOV.	18	14	54
NOV.	26	14	39	DEC.	4	16	23	DEC.	11	08	42	DEC.	18	05	49
DEC.	26	10	11												
1982															
				JAN.	3	04	47	JAN.	9	19	54	JAN.	16	23	59
JAN.	25	04	57	FEB.	1	14	29	FEB.	8	07	58	FEB.	15	20	22
FEB.	23	21	14	MAR.	2	22	16	MAR.	9	20	46	MAR.	17	17	15
MAR.	25	10	18	APR.	1	05	09	APR.	8	10	19	APR.	16	12	43
APR.	23	20	29	APR.	30	12	08	MAY	8	00	45	MAY	16	05	12
MAY	23	04	41	MAY	29	20	07	JUNE	6	16	00	JUNE	14	18	07
JUNE	21	11	53	JUNE	28	05	58	JULY	6	07	32	JULY	14	03	47
JULY	20	18	58	JULY	27	18	22	AUG.	4	22	35	AUG.	12	11	09
AUG.	19	02	46	AUG.	26	09	50	SEPT.	3	12	29	SEPT.	10	17	20
SEPT.	17	12	10	SEPT.	25	04	07	OCT.	3	01	10	OCT.	9	23	28
OCT.	17	00	05	OCT.	25	00	09	NOV.	1	12	58	NOV.	8	06	39
NOV.	15	15	11	NOV.	23	20	06	DEC.	1	00	22	DEC.	7	15	54
DEC.	15	09	19	DEC.	23	14	18	DEC.	30	11	34				
1983															
												JAN.	6	04	01
JAN.	14	05	09	JAN.	22	05	35	JAN.	28	22	27	FEB.	4	19	18
FEB.	13	00	32	FEB.	20	17	33	FEB.	27	08	59	MAR.	6	13	17
MAR.	14	17	45	MAR.	22	02	27	MAR.	28	19	28	APR.	5	08	40
APR.	13	07	59	APR.	20	08	58	APR.	27	06	32	MAY	5	03	44
MAY	12	19	26	MAY	19	14	18	MAY	26	18	48	JUNE	3	21	08
JUNE	11	04	38	JUNE	17	19	47	JUNE	25	08	33	JULY	3	12	13
JULY	10	12	19	JULY	17	02	52	JULY	24	23	28	AUG.	2	00	53
AUG.	8	19	19	AUG.	15	12	48	AUG.	23	15	00	AUG.	31	11	23
SEPT.	7	02	36	SEPT.	14	02	25	SEPT.	22	06	37	SEPT.	29	20	06
OCT.	6	11	17	OCT.	13	19	43	OCT.	21	21	54	OCT.	29	03	38
NOV.	4	22	22	NOV.	12	15	49	NOV.	20	12	30	NOV.	27	10	51
DEC.	4	12	27	DEC.	12	13	10	DEC.	20	02	02	DEC.	26	18	53

	NEW MOON			FIRST QUARTER				FULL MOON				LAST QUARTER			
	D	H	M		D	H	M		D	H	M		D	H	M
1984															
JAN.	3	05	16	JAN.	11	09	49	JAN.	18	14	06	JAN.	25	04	48
FEB.	1	23	47	FEB.	10	04	00	FEB.	17	00	42	FEB.	23	17	13
MAR.	2	18	32	MAR.	10	18	28	MAR.	17	10	10	MAR.	24	08	00
APR.	1	12	11	APR.	9	04	53	APR.	15	19	11	APR.	23	00	27
MAY	1	03	46	MAY	8	11	50	MAY	15	04	29	MAY	22	17	45
MAY	30	16	49	JUNE	6	16	42	JUNE	13	14	42	JUNE	21	11	11
JUNE	29	03	20	JULY	5	21	05	JULY	13	02	21	JULY	21	04	02
JULY	28	11	52	AUG.	4	02	34	AUG.	11	15	45	AUG.	19	19	42
AUG.	26	19	26	SEPT.	2	10	30	SEPT.	10	07	02	SEPT.	18	09	32
SEPT.	25	03	12	OCT.	1	21	53	OCT.	9	23	59	OCT.	17	21	14
OCT.	24	12	09	OCT.	31	13	09	NOV.	8	17	43	NOV.	16	07	00
NOV.	22	22	58	NOV.	30	08	01	DEC.	8	10	54	DEC.	15	15	26
DEC.	22	11	48	DEC.	30	05	28								
1985															
								JAN.	7	02	18	JAN.	13	23	27
JAN.	21	02	30	JAN.	29	03	31	FEB.	5	15	19	FEB.	12	07	57
FEB.	19	18	44	FEB.	27	23	42	MAR.	7	02	14	MAR.	13	17	35
MAR.	21	11	59	MAR.	29	16	12	APR.	5	11	33	APR.	12	04	42
APR.	20	05	22	APR.	28	04	26	MAY	4	19	54	MAY	11	17	35
MAY	19	21	41	MAY	27	12	56	JUNE	3	03	51	JUNE	10	08	20
JUNE	18	11	59	JUNE	25	18	54	JULY	2	12	09	JULY	10	00	50
JULY	17	23	58	JULY	24	23	40	JULY	31	21	42	AUG.	8	18	29
AUG.	16	10	07	AUG.	23	04	38	AUG.	30	09	28	SEPT.	7	12	17
SEPT.	14	19	21	SEPT.	21	11	04	SEPT.	29	00	09	OCT.	7	05	05
OCT.	14	04	34	OCT.	20	20	13	OCT.	28	17	38	NOV.	5	20	08
NOV.	12	14	21	NOV.	19	09	04	NOV.	27	12	43	DEC.	5	09	02
DEC.	12	00	55	DEC.	19	01	59	DEC.	27	07	31				
1986															
												JAN.	3	19	49
JAN.	10	12	23	JAN.	17	22	14	JAN.	26	00	31	FEB.	2	04	42
FEB.	9	00	57	FEB.	16	19	56	FEB.	24	15	03	MAR.	3	12	18
MAR.	10	14	52	MAR.	18	16	39	MAR.	26	03	03	APR.	1	19	31
APR.	9	06	09	APR.	17	10	35	APR.	24	12	48	MAY	1	03	23
MAY	8	22	10	MAY	17	01	01	MAY	23	20	46	MAY	30	12	56
JUNE	7	14	01	JUNE	15	12	01	JUNE	22	03	42	JUNE	29	00	54
JULY	7	04	56	JULY	14	20	11	JULY	21	10	41	JULY	28	15	35
AUG.	5	18	36	AUG.	13	02	22	AUG.	19	18	55	AUG.	27	08	39
SEPT.	4	07	11	SEPT.	11	07	42	SEPT.	18	05	35	SEPT.	26	03	18
OCT.	3	18	55	OCT.	10	13	30	OCT.	17	19	23	OCT.	25	22	27
NOV.	2	06	03	NOV.	8	21	12	NOV.	16	12	13	NOV.	24	16	51
DEC.	1	16	44	DEC.	8	08	03	DEC.	16	07	06	DEC.	24	09	18
DEC.	31	03	11												
1987															
				JAN.	6	22	36	JAN.	15	02	31	JAN.	22	22	47
JAN.	29	13	46	FEB.	5	16	21	FEB.	13	20	59	FEB.	21	08	57
FEB.	28	00	51	MAR.	7	11	58	MAR.	15	13	13	MAR.	22	16	22
MAR.	29	12	47	APR.	6	07	49	APR.	14	02	32	APR.	20	22	16
APR.	28	01	36	MAY	6	02	26	MAY	13	12	51	MAY	20	04	04
MAY	27	15	14	JUNE	4	18	54	JUNE	11	20	50	JUNE	18	11	03
JUNE	26	05	37	JULY	4	08	35	JULY	11	03	33	JULY	17	20	18
JULY	25	20	38	AUG.	2	19	25	AUG.	9	10	18	AUG.	16	08	26
AUG.	24	12	00	SEPT.	1	03	49	SEPT.	7	18	14	SEPT.	14	23	45
SEPT.	23	03	09	SEPT.	30	10	40	OCT.	7	04	13	OCT.	14	18	06
OCT.	22	17	29	OCT.	29	17	11	NOV.	5	16	47	NOV.	13	14	39
NOV.	21	06	34	NOV.	28	00	38	DEC.	5	08	02	DEC.	13	11	42
DEC.	20	18	26	DEC.	27	10	01								

	NEW MOON			FIRST QUARTER			FULL MOON			LAST QUARTER		
	D	H	M		D	H	M		D	H	M		D	H	M
1988															
JAN.	19	05	27	JAN.	25	21	55	JAN.	4	01	41	JAN.	12	07	04
FEB.	17	15	56	FEB.	24	12	16	FEB.	2	20	53	FEB.	10	23	01
MAR.	18	02	03	MAR.	25	04	42	MAR.	3	16	02	MAR.	11	10	57
APR.	16	12	01	APR.	23	22	32	APR.	2	09	22	APR.	9	19	22
MAY	15	22	11	MAY	23	16	50	MAY	1	23	42	MAY	9	01	24
JUNE	14	09	15	JUNE	22	10	24	MAY	31	10	54	JUNE	7	06	23
JULY	13	21	53	JULY	22	02	16	JUNE	29	19	47	JULY	6	11	38
AUG.	12	12	32	AUG.	20	15	52	JULY	29	03	26	AUG.	4	18	23
SEPT.	11	04	51	SEPT.	19	03	19	AUG.	27	10	57	SEPT.	3	03	52
OCT.	10	21	50	OCT.	18	13	02	SEPT.	25	19	08	OCT.	2	16	59
NOV.	9	14	21	NOV.	16	21	36	OCT.	25	04	36	NOV.	1	10	12
DEC.	9	05	37	DEC.	16	05	41	NOV.	23	15	54	DEC.	1	06	50
								DEC.	23	05	29	DEC.	31	04	58
1989															
JAN.	7	19	23	JAN.	14	14	00	JAN.	21	21	34	JAN.	30	02	04
FEB.	6	07	38	FEB.	12	23	15	FEB.	20	15	33	FEB.	28	20	08
MAR.	7	18	20	MAR.	14	10	11	MAR.	22	09	59	MAR.	30	10	23
APR.	6	03	34	APR.	12	23	14	APR.	21	03	14	APR.	28	20	46
MAY	5	11	48	MAY	12	14	21	MAY	20	18	17	MAY	28	04	01
JUNE	3	19	54	JUNE	11	07	00	JUNE	19	06	58	JUNE	26	09	10
JULY	3	05	00	JULY	11	00	20	JULY	18	17	43	JULY	25	13	33
AUG.	1	16	06	AUG.	9	17	29	AUG.	17	03	07	AUG.	23	18	41
AUG.	31	05	45	SEPT.	8	09	50	SEPT.	15	11	51	SEPT.	22	02	11
SEPT.	29	21	48	OCT.	8	00	53	OCT.	14	20	33	OCT.	21	13	19
OCT.	29	15	29	NOV.	6	14	12	NOV.	13	05	52	NOV.	20	04	45
NOV.	28	09	42	DEC.	6	01	26	DEC.	12	16	31	DEC.	19	23	55
DEC.	28	03	21												
1990															
				JAN.	4	10	41	JAN.	11	04	58	JAN.	18	21	18
JAN.	26	19	21	FEB.	2	18	33	FEB.	9	19	17	FEB.	17	18	49
FEB.	25	08	55	MAR.	4	02	06	MAR.	11	10	59	MAR.	19	14	31
MAR.	26	19	49	APR.	2	10	25	APR.	10	03	20	APR.	18	07	03
APR.	25	04	28	MAY	1	20	19	MAY	9	19	31	MAY	17	19	46
MAY	24	11	48	MAY	31	08	12	JUNE	8	11	02	JUNE	16	04	49
JUNE	22	18	56	JUNE	29	22	08	JULY	8	01	24	JULY	15	11	05
JULY	22	02	55	JULY	29	14	02	AUG.	6	14	21	AUG.	13	15	55
AUG.	20	12	40	AUG.	28	07	36	SEPT.	5	01	47	SEPT.	11	20	54
SEPT.	19	00	47	SEPT.	27	02	07	OCT.	4	12	03	OCT.	11	03	32
OCT.	18	15	38	OCT.	26	20	27	NOV.	2	21	49	NOV.	9	13	02
NOV.	17	09	05	NOV.	25	13	12	DEC.	2	07	51	DEC.	9	02	05
DEC.	17	04	23	DEC.	25	03	17	DEC.	31	18	37				
1991															
												JAN.	7	18	37
JAN.	15	23	51	JAN.	23	14	23	JAN.	30	06	10	FEB.	6	13	53
FEB.	14	17	33	FEB.	21	22	59	FEB.	28	18	26	MAR.	8	10	33
MAR.	16	08	11	MAR.	23	06	03	MAR.	30	07	18	APR.	7	06	47
APR.	14	19	38	APR.	21	12	40	APR.	28	21	00	MAY	7	00	48
MAY	14	04	37	MAY	20	19	47	MAY	28	11	38	JUNE	5	15	31
JUNE	12	12	07	JUNE	19	04	20	JUNE	27	03	00	JULY	5	02	51
JULY	11	19	07	JULY	18	15	12	JULY	26	18	25	AUG.	3	11	27
AUG.	10	02	28	AUG.	17	05	02	AUG.	25	09	08	SEPT.	1	18	17
SEPT.	8	11	02	SEPT.	15	22	02	SEPT.	23	22	41	OCT.	1	00	31
OCT.	7	21	39	OCT.	15	17	34	OCT.	23	11	09	OCT.	30	07	12
NOV.	6	11	12	NOV.	14	14	02	NOV.	21	22	58	NOV.	28	15	22
DEC.	6	03	57	DEC.	14	09	33	DEC.	21	10	24	DEC.	28	01	56

NEW MOON	D	H	M	FIRST QUARTER	D	H	M	FULL MOON	D	H	M	LAST QUARTER	D	H	M
1992															
JAN.	4	23	11	JAN.	13	02	33	JAN.	19	21	30	JAN.	26	15	28
FEB.	3	19	00	FEB.	11	16	16	FEB.	18	08	04	FEB.	25	07	57
MAR.	4	13	24	MAR.	12	02	37	MAR.	18	18	19	MAR.	26	02	31
APR.	3	05	02	APR.	10	10	07	APR.	17	04	44	APR.	24	21	40
MAY	2	17	46	MAY	9	15	45	MAY	16	16	04	MAY	24	15	54
JUNE	1	03	57	JUNE	7	20	48	JUNE	15	04	51	JUNE	23	08	12
JUNE	30	12	19	JULY	7	02	45	JULY	14	19	07	JULY	22	22	13
JULY	29	19	36	AUG.	5	10	59	AUG.	13	10	28	AUG.	21	10	02
AUG.	28	02	43	SEPT.	3	22	40	SEPT.	12	02	17	SEPT.	19	19	54
SEPT.	26	10	41	OCT.	3	14	13	OCT.	11	18	04	OCT.	19	04	13
OCT.	25	20	35	NOV.	2	09	12	NOV.	10	09	21	NOV.	17	11	40
NOV.	24	09	12	DEC.	2	06	18	DEC.	9	23	41	DEC.	16	19	15
DEC.	24	00	43												
1993															
				JAN.	1	03	39	JAN.	8	12	38	JAN.	15	04	02
JAN.	22	18	28	JAN.	30	23	20	FEB.	6	23	56	FEB.	13	14	58
FEB.	21	13	06	MAR.	1	15	47	MAR.	8	09	47	MAR.	15	04	17
MAR.	23	07	16	MAR.	31	04	11	APR.	6	18	45	APR.	13	19	39
APR.	21	23	49	APR.	29	12	42	MAY	6	03	35	MAY	13	12	20
MAY	21	14	08	MAY	28	18	22	JUNE	4	13	03	JUNE	12	05	37
JUNE	20	01	54	JUNE	26	22	45	JULY	3	23	46	JULY	11	22	50
JULY	19	11	25	JULY	26	03	26	AUG.	2	12	11	AUG.	10	15	20
AUG.	17	19	29	AUG.	24	09	59	SEPT.	1	02	34	SEPT.	9	06	27
SEPT.	16	03	12	SEPT.	22	19	33	SEPT.	30	18	54	OCT.	8	19	37
OCT.	15	11	37	OCT.	22	08	53	OCT.	30	12	38	NOV.	7	06	37
NOV.	13	21	35	NOV.	21	02	04	NOV.	29	06	32	DEC.	6	15	50
DEC.	13	09	28	DEC.	20	22	26	DEC.	28	23	07				
1994															
												JAN.	5	00	01
JAN.	11	23	11	JAN.	19	20	27	JAN.	27	13	24	FEB.	3	08	07
FEB.	10	14	31	FEB.	18	17	49	FEB.	26	01	16	MAR.	4	16	55
MAR.	12	07	06	MAR.	20	12	15	MAR.	27	11	11	APR.	3	02	55
APR.	11	00	18	APR.	19	02	35	APR.	25	19	46	MAY	2	14	33
MAY	10	17	08	MAY	18	12	51	MAY	25	03	40	JUNE	1	04	03
JUNE	9	08	28	JUNE	16	19	57	JUNE	23	11	34	JUNE	30	19	31
JULY	8	21	39	JULY	16	01	13	JULY	22	20	17	JULY	30	12	41
AUG.	7	08	46	AUG.	14	05	58	AUG.	21	06	48	AUG.	29	06	41
SEPT.	5	18	34	SEPT.	12	11	35	SEPT.	19	20	02	SEPT.	28	00	24
OCT.	5	03	56	OCT.	11	19	18	OCT.	19	12	19	OCT.	27	16	45
NOV.	3	13	37	NOV.	10	06	15	NOV.	18	06	58	NOV.	26	07	05
DEC.	2	23	55	DEC.	9	21	08	DEC.	18	02	18	DEC.	25	19	08
1995															
JAN.	1	10	57	JAN.	8	15	47	JAN.	16	20	27	JAN.	24	04	59
JAN.	30	22	48	FEB.	7	12	55	FEB.	15	12	16	FEB.	22	13	05
MAR.	1	11	49	MAR.	9	10	15	MAR.	17	01	26	MAR.	23	20	11
MAR.	31	02	09	APR.	8	05	36	APR.	15	12	09	APR.	22	03	19
APR.	29	17	37	MAY	7	21	45	MAY	14	20	49	MAY	21	11	36
MAY	29	09	28	JUNE	6	10	27	JUNE	13	04	04	JUNE	19	22	02
JUNE	28	00	51	JULY	5	20	04	JULY	12	10	50	JULY	19	11	11
JULY	27	15	15	AUG.	4	03	17	AUG.	10	18	17	AUG.	18	03	04
AUG.	26	04	33	SEPT.	2	09	04	SEPT.	9	03	38	SEPT.	16	21	10
SEPT.	24	16	56	OCT.	1	14	36	OCT.	8	15	53	OCT.	16	16	27
OCT.	24	04	37	OCT.	30	21	18	NOV.	7	07	21	NOV.	15	11	41
NOV.	22	15	44	NOV.	29	06	29	DEC.	7	01	28	DEC.	15	05	33
DEC.	22	02	24	DEC.	28	19	07								

	NEW MOON			FIRST QUARTER			FULL MOON			LAST QUARTER		
	D	H	M	D	H	M	D	H	M	D	H	M
1996												
JAN.	20	12	51	JAN.	27	11	15	JAN. 5	20	52	JAN. 13	20 47
FEB.	18	23	31	FEB.	26	05	53	FEB. 4	15	59	FEB. 12	08 38
MAR.	19	10	46	MAR.	27	01	32	MAR. 5	09	24	MAR. 12	17 16
APR.	17	22	50	APR.	25	20	42	APR. 4	00	08	APR. 10	23 37
MAY	17	11	47	MAY	25	14	15	MAY 3	11	49	MAY 10	05 05
JUNE	16	01	37	JUNE	24	05	25	JUNE 1	20	48	JUNE 8	11 06
JULY	15	16	16	JULY	23	17	50	JULY 1	03	59	JULY 7	18 56
AUG.	14	07	35	AUG.	22	03	38	JULY 30	10	37	AUG. 6	05 26
SEPT.	12	23	09	SEPT.	20	11	24	AUG. 28	17	53	SEPT. 4	19 07
OCT.	12	14	16	OCT.	19	18	10	SEPT. 27	02	52	OCT. 4	12 06
NOV.	11	04	17	NOV.	18	01	10	OCT. 26	14	12	NOV. 3	07 52
DEC.	10	16	58	DEC.	17	09	31	NOV. 25	04	11	DEC. 3	05 07
								DEC. 24	20	41		
1997												
											JAN. 2	01 46
JAN.	9	04	26	JAN.	15	20	03	JAN. 23	15	12	JAN. 31	19 41
FEB.	7	15	08	FEB.	14	08	58	FEB. 22	10	28	MAR. 2	09 39
MAR.	9	01	15	MAR.	16	00	07	MAR. 24	04	46	MAR. 31	19 39
APR.	7	11	03	APR.	14	17	01	APR. 22	20	35	APR. 30	02 37
MAY	6	20	48	MAY	14	10	56	MAY 22	09	14	MAY 29	07 52
JUNE	5	07	05	JUNE	13	04	53	JUNE 20	19	10	JUNE 27	12 43
JULY	4	18	41	JULY	12	21	45	JULY 20	03	21	JULY 26	18 30
AUG.	3	08	15	AUG.	11	12	43	AUG. 18	10	57	AUG. 25	02 24
SEPT.	1	23	53	SEPT.	10	01	33	SEPT. 16	18	52	SEPT. 23	13 37
OCT.	1	16	53	OCT.	9	12	23	OCT. 16	03	47	OCT. 23	04 50
OCT.	31	10	02	NOV.	7	21	44	NOV. 14	14	13	NOV. 21	23 59
NOV.	30	02	15	DEC.	7	06	11	DEC. 14	02	38	DEC. 21	21 44
DEC.	29	16	58									
1998												
				JAN.	5	14	20	JAN. 12	17	25	JAN. 20	19 41
JAN.	28	06	02	FEB.	3	22	54	FEB. 11	10	24	FEB. 19	15 28
FEB.	26	17	27	MAR.	5	08	42	MAR. 13	04	35	MAR. 21	07 38
MAR.	28	03	15	APR.	3	20	20	APR. 11	22	24	APR. 19	19 54
APR.	26	11	43	MAY	3	10	05	MAY 11	14	30	MAY 19	04 36
MAY	25	19	34	JUNE	2	01	46	JUNE 10	04	19	JUNE 17	10 40
JUNE	24	03	52	JULY	1	18	43	JULY 9	16	02	JULY 16	15 15
JULY	23	13	45	JULY	31	12	06	AUG. 8	02	11	AUG. 14	19 49
AUG.	22	02	04	AUG.	30	05	08	SEPT. 6	11	23	SEPT. 13	01 59
SEPT.	20	17	02	SEPT.	28	21	12	OCT. 5	20	13	OCT. 12	11 12
OCT.	20	10	10	OCT.	28	11	47	NOV. 4	05	20	NOV. 11	00 29
NOV.	19	04	28	NOV.	27	00	24	DEC. 3	15	21	DEC. 10	17 55
DEC.	18	22	44	DEC.	26	10	47					
1999												
								JAN. 2	02	51	JAN. 9	14 23
JAN.	17	15	47	JAN.	24	19	17	JAN. 31	16	08	FEB. 8	11 59
FEB.	16	06	40	FEB.	23	02	44	MAR. 2	07	00	MAR. 10	08 42
MAR.	17	18	49	MAR.	24	10	19	MAR. 31	22	50	APR. 9	02 52
APR.	16	04	23	APR.	22	19	03	APR. 30	14	56	MAY 8	17 29
MAY	15	12	06	MAY	22	05	35	MAY 30	06	41	JUNE 7	04 21
JUNE	13	19	04	JUNE	20	18	14	JUNE 28	21	38	JULY 6	11 58
JULY	13	02	25	JULY	20	09	02	JULY 28	11	26	AUG. 4	17 28
AUG.	11	11	09	AUG.	19	01	48	AUG. 26	23	49	SEPT. 2	22 18
SEPT.	9	22	03	SEPT.	17	20	07	SEPT. 25	10	52	OCT. 2	04 03
OCT.	9	11	36	OCT.	17	15	00	OCT. 24	21	04	OCT. 31	12 05
NOV.	8	03	54	NOV.	16	09	04	NOV. 23	07	05	NOV. 29	23 19
DEC.	7	22	32	DEC.	16	00	51	DEC. 22	17	33	DEC. 29	14 05

NEW MOON	D	H	M	FIRST QUARTER	D	H	M	FULL MOON	D	H	M	LAST QUARTER	D	H	M
2000															
JAN.	6	18	14	JAN.	14	13	35	JAN.	21	04	41	JAN.	28	07	58
FEB.	5	13	04	FEB.	12	23	22	FEB.	19	16	28	FEB.	27	03	55
MAR.	6	05	18	MAR.	13	07	00	MAR.	20	04	45	MAR.	28	00	22
APR.	4	18	14	APR.	11	13	31	APR.	18	17	43	APR.	26	19	31
MAY	4	04	13	MAY	10	20	01	MAY	18	07	36	MAY	26	11	56
JUNE	2	12	16	JUNE	9	03	31	JUNE	16	22	28	JUNE	25	01	01
JULY	1	19	21	JULY	8	12	55	JULY	16	13	56	JULY	24	11	03
JULY	31	02	26	AUG.	7	01	03	AUG.	15	05	14	AUG.	22	18	52
AUG.	29	10	20	SEPT.	5	16	28	SEPT.	13	19	38	SEPT.	21	01	29
SEPT.	27	19	54	OCT.	5	11	00	OCT.	13	08	54	OCT.	20	08	00
OCT.	27	07	59	NOV.	4	07	27	NOV.	11	21	15	NOV.	18	15	26
NOV.	25	23	13	DEC.	4	03	56	DEC.	11	09	04	DEC.	18	00	43
DEC.	25	17	22												
2001															
				JAN.	2	22	32	JAN.	9	20	26	JAN.	16	12	36
JAN.	24	13	08	FEB.	1	14	04	FEB.	8	07	13	FEB.	15	03	25
FEB.	23	08	22	MAR.	3	02	04	MAR.	9	17	24	MAR.	16	20	46
MAR.	25	01	22	APR.	1	10	50	APR.	8	03	23	APR.	15	15	32
APR.	23	15	27	APR.	30	17	09	MAY	7	13	54	MAY	15	10	11
MAY	23	02	47	MAY	29	22	10	JUNE	6	01	40	JUNE	14	03	29
JUNE	21	11	59	JUNE	28	03	21	JULY	5	15	05	JULY	13	18	46
JULY	20	19	46	JULY	27	10	09	AUG.	4	05	57	AUG.	12	07	54
AUG.	19	02	57	AUG.	25	19	56	SEPT.	2	21	44	SEPT.	10	19	00
SEPT.	17	10	28	SEPT.	24	09	32	OCT.	2	13	49	OCT.	10	04	21
OCT.	16	19	24	OCT.	24	02	59	NOV.	1	05	42	NOV.	8	12	22
NOV.	15	06	41	NOV.	22	23	21	NOV.	30	20	50	DEC.	7	19	53
DEC.	14	20	48	DEC.	22	20	57	DEC.	30	10	42				
2002															
												JAN.	6	03	56
JAN.	13	13	30	JAN.	21	17	48	JAN.	28	22	52	FEB.	4	13	34
FEB.	12	07	41	FEB.	20	12	03	FEB.	27	09	18	MAR.	6	01	26
MAR.	14	02	04	MAR.	22	02	30	MAR.	28	18	26	APR.	4	15	30
APR.	12	19	22	APR.	20	12	49	APR.	27	03	01	MAY	4	07	17
MAY	12	10	47	MAY	19	19	43	MAY	26	11	53	JUNE	3	00	06
JUNE	10	23	47	JUNE	18	00	31	JUNE	24	21	43	JULY	2	17	21
JULY	10	10	27	JULY	17	04	48	JULY	24	09	08	AUG.	1	10	24
AUG.	8	19	16	AUG.	15	10	13	AUG.	22	22	30	AUG.	31	02	32
SEPT.	7	03	11	SEPT.	13	18	10	SEPT.	21	14	00	SEPT.	29	17	04
OCT.	6	11	19	OCT.	13	05	35	OCT.	21	07	21	OCT.	29	05	29
NOV.	4	20	36	NOV.	11	20	54	NOV.	20	01	35	NOV.	27	15	47
DEC.	4	07	35	DEC.	11	15	49	DEC.	19	19	11	DEC.	27	00	32
2003															
JAN.	2	20	24	JAN.	10	13	16	JAN.	18	10	49	JAN.	25	08	35
FEB.	1	10	50	FEB.	9	11	13	FEB.	16	23	52	FEB.	23	16	47
MAR.	3	02	36	MAR.	11	07	17	MAR.	18	10	35	MAR.	25	01	53
APR.	1	19	19	APR.	9	23	41	APR.	16	19	37	APR.	23	12	20
MAY	1	12	15	MAY	9	11	54	MAY	16	03	37	MAY	23	00	31
MAY	31	04	20	JUNE	7	20	28	JUNE	14	11	17	JUNE	21	14	46
JUNE	29	18	40	JULY	7	02	33	JULY	13	19	22	JULY	21	07	02
JULY	29	06	54	AUG.	5	07	29	AUG.	12	04	50	AUG.	20	00	49
AUG.	27	17	27	SEPT.	3	12	36	SEPT.	10	16	38	SEPT.	18	19	04
SEPT.	26	03	10	OCT.	2	19	11	OCT.	10	07	28	OCT.	18	12	32
OCT.	25	12	51	NOV.	1	04	26	NOV.	9	01	14	NOV.	17	04	17
NOV.	23	23	01	NOV.	30	17	17	DEC.	8	20	37	DEC.	16	17	43
DEC.	23	09	45	DEC.	30	10	04								